DOCUMENT RESUME

ED 289 339 EC 201 300

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TITLE Educational and Family Perceptions of Exceptionally Gifted and Gifted Preadolescent Boys.
PUB DATE Apr 87
NOTE 23p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (Baltimore, MD, April 23-26, 1987).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Career Awareness; *Family Relationship; *Gifted; *Intelligence Differences; Intermediate Grades; Males; Mathematics; *Peer Relationship; *Personality Traits; Preadolescents; School Attitudes; Sciences; *Self Evaluation (Individuals); Student Attitudes

ABSTRACT

The study examined the perceptions of two gifted samples (n=54) and a nongifted control group (n=130) of preadolescent boys (ages 12-13) regarding their school and peer experiences, intrafamily roles, discipline and identification models, and career choices. Results of a 62-item questionnaire indicated that the group identified as having exceptionally high intelligence quotient (IQ) scores (above 150) considered a wider range of careers and perceived their families as warmer and more closely knit than did boys in the sample identified as exceptionally gifted in math/science (based on standardized measures of mathematical and science aptitude scores). Subjects in the sample identified as gifted in math/science had a more positive and academic view of school. Exceptionally gifted subjects' views of school were significantly correlated with their cognitive scores but unrelated to their creative scores. Results suggested that preadolescent boys' reported school and family experiences differed according to type of cognitive giftedness as well as whether or not they were cognitively gifted. Family and psycho-educational implications are discussed. (Author/JW)

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Educational and Family Perceptions of Exceptionally Gifted and Gifted Preadolescent Boys

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EDUCATIONAL AND FAMILY PERCEPTIONS OF GIFTED AND NON-GIFTED PREADOLOSCENT BOYS.

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This is a research report of the perceptions of two groups of exceptionally gifted preadolescent boys and a nongifted control group. The gifted samples are matched but represent two different domains of exceptional cognitive giftedness: IQ or Math/Science. All subjects are within the 99th percentile. Attention throughout the project centers upon if and how different domains of giftedness interact with creative potential, personality and family variables. This paper focuses upon the gifted samples (n = 54) and nongifted control group's (n = 130) perceptions of their school and peer experiences; intrafamily roles, discipline and identification models; and career choices. The data is based upon a 62-item questionnaire covering these topics. Analyses are by MANOVA, correlation techniques, and Chi-Squares. Results show that the two gifted sample differ significantly in their perceptions of school experiences, future careers, family experiences and role models. Exceptionally High IQ boys consider a wider range of careers, perceive their families as more closely knit and warmer than the Math/Science gifted boys, who in turn, have a more positive and academic view of school. Exceptionally gifted subjects' views of school are significantly correlated with their cognitive scores: IQ (r = .46) and SAT Math (r = .49), but unrelated to their creative scores whether these are experientially based (the BIC) or divergent thinking scores (Wallach-Kogan test). Results suggest that preadolescent boys' reported school and family experiences differ according to their type of cognitive giftedness as well whether or not they are cognitively gifted. Family and psycho educational implications are discussed.

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Introduction

Over the past several decades there has been a research trend with important assessment and intervention implications. This is the increasing empirical differentiation among children and adolescents of different ages, sex and behavioral categories. This empirical strategy has let to increasingly greater empirical and conceptional clarity and has assisted researchers and practitioners alike in relating the specific behaviors and developments of a particular child to more appropriate, less global and non-specific understanding and interventions. This approach first applied to mentally retarded children and then rapidly in the 1970's and 1980's to developmental psychopathology, has been applied to children of differing domains and levels of cognitive abilities with some benefits to their psycho-educational assessment and programming.

A critical issue is if and how children of different domains and levels of cognitive abilities differ in their psychometric profiles and their rates and levels of educational and career achievements(ALBERT, 1980; ALBERT and Runco, 1986).

The present report is part of an in-depth, longitudinal study of two samples of exceptionally precocious boys and their families initiated in 1977 and appropriate controls. The longitudinal project, initiated in 1977, focuses upon the families of the subjects (both parents and the index child). The developmental outcomes to be determined are subjects' ability to select and enter into personally satisfying, productive careers; how eminent they have become or appear likely to become in their middle 20's. These will be measured in terms of empirical indices and subjects' over-all cognitive and psychosocial development(ALBERT, 1975)

Method

Subjects

There are three samples, a control and two samples of exceptionally gifted boys all within the 99th percentile (IQ or Math/Science).

Subjects were between 12 and 13 years old. The exceptionally gifted Math/Science boys (n=26) were selected from among the top 40 in the 1976 Johns Hopkins study of Mathematically Precocious Youth study. Their ranking was based on a composite score of the SAT math and other standard measures of mathematical and science aptitudes (Stanley, George & Solano, 1977). Their mean SAT math score was 635; their mean SAT verbal score was 492. Their families averaged 2.5 children and were in the upper-middle socioeconomic class. The second sample (n=28) of exceptionally high IQ boys was selected on the basis of IQs above 150. Its mean IQ was 155 (sd = 6.8) and their families averaged 2.3 children and were in the upper-middle class. All boys and their parents were initially unknown and volunteered to participate. Controls and their families match the exceptionally gifted except in their cognitive abilities.

Instruments

The measures of cognitive giftedness (the SAT and the IQ) have performance characteristics differing significantly from many of those involved in real-life creativity (Sternberg, 1982), or believed required for the attainment of eminence (Nicholls, 1983). However, these cognitive measures are quite predictive of academic performance (Stanley, 1978) and, to a certain degree, of noteworthy real-life academic and career achievement (Chauncey & Hilton, 1983).

The majority of instruments used in the project are deliberately chosen as standard measures that had demonstrated acceptable reliability and validity.

The measures used with the parents are (1) the California Psychological Inventory (CPI), (2) the Loevinger Sentence Completion, and (3) the Wallach-Kogan Test of Creative Potential (Divergent Thinking tests). The measures given children include these plus (1) the Biographical Inventory Creativity (BIC), (2) the Allport-Vernon-Lindzey Study of Values (A.V.L.), (3) the Holland Vocational Preference Inventory, (4) the Wallach-Kogan Divergent Thinking Test (DT), and (5) a 62-item children's questionnaire (CQ) covering subjects' attitudes and perceptions regarding school, peers, career drives and family relations, family discipline and family closeness.

In the analysis to be reported, subjects' IQs, math/science scores (Z-scores for six tests) make up the cognitive scores. Five divergent thinking tests make up the creative potential scores for all subjects. A total DT score was calculated by adding together the DT verbal and figural fluency sums after each sum was transformed in Z scores for control and exceptionally gifted samples separately.

Results

Results will be presented in stages, the first presenting clusters of the Children's Questionnaire (CQ) items as predictors of subjects' cognitive abilities -- IQ, math/science aptitude, and creative potential. After which, sample differences will be presented regarding clusters of CQ items concerned with subjects' school experiences, career choices, perception of parents' work and education and their expectations, as well as their perceptions of intra-family life, closeness and roles.

The results in general confirm statistically a basic hypothesis of the project: that samples of preadolescent boys identified as exceptionally gifted in either math/science talents or exceptionally high IQs perceive and respond significantly different to their family systems and members, their educational situations and their career choices.

The results show that the two exceptionally gifted samples differ in their perceptions of school experiences, careers, family experiences and role models. The exceptionally high IQ boys consider a wider range of careers, perceive their families as more closely knit and warmer than the exceptionally gifted math/science boys who in turn have a more positive and academic view of school. The exceptionally gifted subjects' views of school are also statistically correlated with their cognitive scores: IQ (R = .46) and SAT math (R = .49) but the exceptionally gifted boys' views of school are unrelated to their creative potential scores whether these are experientially based (BIC) or Divergent Thinking (DT) scores.

Children's Questionnaires and Cognitive Abilities: Multiple Regressions.

One of the more important results of these analyses is that CQ items are statistically significant predictors only in the case of subjects' IQ but not their math/science scores nor creative potential (DT) scores. The first regression analysis used a set of 6 CQ items concerned with subjects' family. Each item was dichotomized by a method suggested by COHEN and COHEN (1975, Chapter 5) with subjects' IQ scores as the criterion. This set of family items was significantly related to IQ (R = .57, p = .04). The Beta weights indicated that two items were the critical predictors in this set. Their Beta weights were .30 and .33 respectively. CQ 54 asked who subjects spent their free time with and CQ 56 with whom they spoke when they were bothered and worried. Similar regression analyses showed that this set of CQ items was moderately related to subjects' creative potential (DT scores). The correlations were R = .34 and R = .55 for the exceptionally high IQ sample and the math/science sample respectively. Neither R is statistically significant. Another set of 9 CQ items asked about subjects' school experiences with teachers and other students and their educational experiences. These items were significantly related to IQ (R = .62, p = .01) but again not to math/science scores. In the case of IQ scores, the largest Beta weight (.48) was obtained by CQ item 1 which asks how much time subjects devoted daily to home work. This set of CQ items was only moderately related to creative potential scores for IQ subjects (R = .46) and math/science subjects (R = .47)

Career Expectations

Combining the questions of what the young boys believe their fathers' occupations were with the careers they believe their fathers want for them gives an interesting insight into one early basis of career choice. There is no difference (N.S.) among the three groups regarding what they report their fathers careers are. In terms of the career the boys thought their fathers wanted for them, we find a very significant (p≤.005) among the three groups. For the most part, the two exceptionally gifted samples agree quite closely in their perception of potential occupations. The majority of these boys believe that their fathers want them to be chemists, or in some mathematically - or technologically - oriented occupation. On the other hand, the control group believed their fathers wanted them to have more conventional professionals such as dentists, doctors, lawyers, or university professors. None of the exceptionally highly gifted boys believe their fathers want them to be university professors, or these other professions. From what we know in other interviews, these boys are both right and wrong. Many of their fathers would not mind if their boys became university professors, especially among the math/science groups, since this leads the way to research. But subjects are also correct in that hardly any of the exceptionally gifted boys' fathers expected a dental, a law or a medical career for them. Putting this information together, we see that what they know their fathers do for a living, is not the job they think their fathers want them to have.

The exceptionally gifted boys report that their mothers have

a wide variety of jobs with no particular speciality among the three group's mothers. But, in terms of the careers they believe their mothers want them to have, we again find strong difference ($p = .008$) among the three groups. Interestingly, the mothers and fathers seem to agree, as far as what the boys perceive.

The exceptionally gifted boys believe that their mothers, like their fathers, want them to have either math/science or technological careers; the control group believes that their mothers, like their fathers, want them to be lawyers, doctors, dentists and university professors: a more conventional set of careers. There is clearly perceived agreement among mothers and fathers in the boys' career choice.

What about the boys' own career aspirations? Answers to this question come from two items; one a fill-in and the other a checklist also used by parents. In terms of the fill-in item, there is a highly significant difference ($p = .001$) among the three groups' self-selected careers. There are differences among three groups in terms of their preferred careers. These differences in career choices show specificity and, we believe, a high sense of reality in terms of the way these boys academically perform best. The exceptionally high IQ group wants careers in the sciences, primarily in terms of technology rather than in research and, in a few instances, as science fiction writer . These boys list a much greater variety of potential careers for themselves than either of the two other groups. If there is any specific career that the exceptionally high IQ boys want, at least in checking careers, it is to be a chemist. The math/science boys thought they would like to be, equally either electricians, laboratory assistants, which for many meant research, and accountants. These are careers that rely upon numerical ability and working with numbers. On the other hand, the control group basically report careers that they believe their parents want for them. They chose overwhelmingly, law or dentistry but interestingly enough, secondly careers in medicine or university teaching. Using the fill-in answers for their most-wanted careers, the math/science boys are much more interested in research - being a scientist - than being a lab assistant as the check-list selections showed. Nor did they want to be mathematicians as much as a lab assistant (researchers) or

writer. Again, this has to do with science fiction. Some of the exceptionally high IQ group did want to be physicians, lawyers, or mathematicians, in contrast to the math/science boys. This choice of mathematics links up with later follow-up data. Many of the exceptionally high IQ boys have strong to exceptionally strong mathematical abilities in terms of their grades and SAT math scores.

The control group's first fill-in career choices are mainly a physician, a professional athlete, or in a variety of other careers. These differences border on being statistically significant ($p = .08$).

Teachers' Roles

An important question is the role of teachers in these gifted boys' career choices. We often believe, and like to believe, that teachers are influential in children's early career choices. The evidence in the present study is that teachers do not have a fraction of the importance of parents, in either learning about special programs for the gifted or potential careers. We asked the subjects "From whom did you learn about your most likely career?". From whom did they learn about their prospective careers? Teachers, even for the non-exceptionally gifted boys, do not have the kind of influence one might expect in the pre-adolescent years. Persons whose views matter most for the exceptionally gifted and their controls are somewhat different. Parents per se are a more important source of information about a career only for the control group - the average gifted boy. Both parents and one's self are almost equally important sources of career information for the math/science boys. For the exceptionally gifted IQ boys, they themselves are the main as the source of career information and somewhat less, their parents. Not only are the groups' differences significant, but teachers were infrequently reported for all three groups. Clearly, among exceptionally gifted boys, there is a greater likelihood that their early career choice has a great deal to do with their own sources of information and reflection as it does with their parents. With the less gifted boy, his parents are especially important.

Approval and Disapproval

Allied to intra-family life for young persons are the person(s) whose approval or disapproval means the most to them. A significant difference (p=.04) occurs again between the two exceptionally gifted groups. For the exceptionally high IQ group, there are primarily two sources of approval that matter - both parents, and oneself. For the math/science group it is both parents (compared to their answers on other issues), strikingly high for their fathers' approval, and very much less themselves. Keeping in mind what was reported about the person(s) to whom these boys turn to when they have a worry to discuss and to whom they feel closest, this is evidence that the math/science sample seems to wish more contact with parents, especially father and less time on their own. For the most part, the exceptionally high IQ group is in the company of those persons whose approval matters most and with whom they talk things over. On this issue, the significant difference is between the two exceptionally gifted groups. The control boys are more likely to report that the approval of both parents is important to them.

In terms of the person(s) whose disapproval matters most to them, for the math/science boys, again it is the father's, next both parents, and even less, their own. For the exceptionally high IQ group, it is both parents', disapproval, or either the mother's or father's that matters most. Again the control group seems to choose a greater range of persons - parents, the father, a sib, or themselves without any clear preference.

Family Members' Important Attributes

The results in this section are presented as important trends, some significant, others bordering on it. An important component of any family are the important attributes of each member. These are the bases for identifications or not identifying. The present study is interested in how the exceptionally gifted boys and their controls perceived different members of their families in terms of important abilities, motivations and interests. Subjects were asked which family member they believed was the most talented, the smartest, the most ambitious, the most independent, the most concerned with education, and lastly, the most content, at ease. Subjects are quite clear about whom they selected, especially the exceptionally gifted boys.

Only the exceptionally gifted boys believed that they were the most talented in their families; their mothers were a distant second. For the math/science and the control boys, usually a sib was nominated as most more talented, but the boys themselves were the second most mentioned. As to smartness or intelligence, the exceptionally high IQ group chose either themselves, or their fathers. The other two groups differed again. The math/science boys most often nominated their fathers and secondly themselves, whereas the control boys chose their fathers or a sib; less often themselves which could be true. No group chose the mother.

As to motivation, such as ambition and independence, an interesting similarity occurs among the three groups. All three groups named themselves the most ambitious family member and next a sib, with either or both parents, a distant third. Linked to

ambition is independence. In the case of the most independent family member, the two exceptionally gifted groups differed in their choices. The majority of the exceptionally high IQ group, (as well as the control group) named their fathers as the most independent member of the family with a sib or themselves a distant second. The math/science boys' two most frequent choices were themselves and their fathers.

These responses may mirror the intra-family conditions of the math/science boys, in and outside of their families. It may also indicate that for some preadolescents, independence is who has the greatest freedom to decide important issues within and outside the family. In this case, subjects' responses could say more about the father's role than his independence motivation. Putting these results together, the exceptionally high IQ boys appear to have a very high (healthy) opinion of themselves in terms of talent, brains and ambition. On the other hand, the math/science boys believe that another family member - a sib or the father are more likely to be the more talented or the smartest. In common among all three groups is the belief that they are the most ambitious in their families, with fathers the more independent.

Strong concern with education is an initial predictor for becoming educated. There is unanimity among the three groups. As with ambitiousness, again subjects most often named themselves the most concerned with education. In this regard, the math/science boys overwhelmingly chose themselves ($p = .07$). This has proven true in terms of their subsequent education.

In terms of whether or no these attributes (or their lack) add up to contentment, being at ease , an interesting difference ($p = .05$) appears among these three groups. For the exceptionally high IQ group, the most frequently named contented member of the family is a sib, with the mother second. The control group named a sib, then next themselves or mother. In the math/science group, no one member is clearly mentioned as the most contented. In general, fathers were infrequently nominated as a family's most contented member.

Family Closeness

An important intrafamily dynamic is related to closeness - the person with whom the young boy feels closest. There are differences (p=.05) among the three groups on this issue. The largest difference is again between the exceptionally gifted groups. The exceptionally high IQ group report feeling closer to their parents, especially both parents; the math/science group reports that it feels closest to themselves, and then to mother or both parents. In both groups their fathers were less frequently nominated. In the light of these boys' career and educational plans and the salient roles their fathers play, this appears somewhat surprising. The control group appears to discuss their problems with the same people that it feels close to: parent(s), friends, and less so, themselves. Related to this, of course, is the number of friends that the subject has. There is a significant difference in terms of the number of friends that the exceptionally high IQ group, and the control group report, in contrast to the math/science boys. The exceptionally high IQ boys and the control boys feel like they have an average or more than average number of friends among their acquaintances. This is not true of the math/science boys. They report considerably fewer friends than the other groups.

Overall, according to their self-reports, math/science boys not only feel isolated, but probably are somewhat more isolated than the exceptionally high IQ boys. Differing from both exceptionally gifted groups, the control group reports a wider range of friends, feels more closeness within the home and has a wider range of people to whom he can turn when he is bothered and wants to talk things over. Of all the groups, the math/science boys appear more isolated.

Spending Time With

An emotional underpinning of these perspectives is how close subjects believe their families are compared to other families they know. The great majority of all three groups believe their families are close, with many exceptionally high IQ boys reporting their families much closer than the others. The math/science group are less sure, many of them reporting that their families are closer than most, but not very close. Controls report, for the most part, their families as not close, but - interestingly - as close as most of the families they know. The picture is that the exceptionally high IQ group overwhelmingly feels that its families are close; some of the math/science group feel this way, but a greater number of them say "no" or, at best average. And the control group rates the closeness of their families less favorably, and more in terms of being the average in its closeness.

Another important indicator of how close a person feels to other persons is how much free time they want to spend with them. There are two aspects to this: who they do spend time with, and who they prefer to. There is a significant difference (p=.05) among the three groups. The exceptionally high IQ boys generally spend most of their free time with a close friend and somewhat less so, themselves. The math/science boys spend most of their free time with themselves and considerably less with a close friend. The control group spends most of its free time with no one person - a close friend, a brother, themselves or their parents - in that order. For the exceptionally gifted boys, there is noticeably less free time spent with their parent(s)

than for the control group.

Part of the same issue is who they would choose to spend more free time with. Only the control subjects were spending their free time with the people they prefer, usually a close friend, a sib, or themselves. The two exceptionally gifted groups were almost reversed in their selections of persons they chose to be with from those they do spend most of their free time with ($p = .04$). The exceptionally high IQ group, rather than spending time mainly with a close friend or themselves would prefer to have more free time with both of their parents or more time with their fathers in addition to both parents. The math/science group prefers not to spend so much time with themselves, but to be with a close friend, their father or both parents. The main change is to be with a close friend. Whereas the control groups appears to be already spending free time with their preferred companions, both exceptionally gifted groups wish for major changes. All three groups report no wish to spend their free time with a teacher.

To whom do they turn when bothered? There was an interesting difference ($p = .03$) among the three groups, especially between the two exceptionally gifted samples. Exceptionally high IQ boys would overwhelmingly turn to one or both parents, and next, to themselves. The math/science boys differ. They were almost evenly divided between a parent, both parents, or themselves for talking problems out. The control group's preferences are less clear. So, in terms of handling problems and worries, the exceptionally high IQ boy will turn to a parent, the math/science boy will as likely turn to himself or a parent, and the control group boys will turn to a variety of people.

Conclusions

(1) Exceptionally gifted boys (and to a lesser extent their controls) are very specific in their perceptions of school, career and intra-family life and membership. This fits with impressions gained during subsequent interviews.

(2) The views of the three groups suggest that the normally gifted controls are more conventional and congruent with their parents regarding their emotional and career aspirations. The exceptionally gifted boys are less conventional and somewhat less congruent with their parents. Teachers are rarely nominated as influential.

(3) The math/science boys report more evidence of social and family isolation, the exceptionally high IQ boys much less, and the controls none. This pattern holds for who these preadolescents would prefer to be with. The controls more or less spend their free time with persons they wish to; the exceptionally high IQ would prefer more time with either or both parents; and the math/science sample would much prefer to be with a close friend, a parent (specially the father), to spending as much time with themselves as they do. Perhaps common at this age for boys, more free time with their fathers was frequently mentioned.

(4) In terms of overall family closeness, a difference exists between the two exceptionally gifted samples. The exceptionally gifted sample feels closest to their parents, and the math/science sample, closest to themselves. Fathers were least nominated for closeness yet their approval-disapproval mattered.

(5) Overall, the exceptionally gifted boys' career expectations start within the home; they think of themselves as quite capable (realistically). But in terms of the emotional feel and sense of closeness and relatedness there are reported "real" differences among the exceptionally gifted boys and their controls.

These differences suggest that the sources for career plans may be less restricted for the exceptionally high IQ samples than either the math/science or control samples. Each of these samples appear restricted to a single main source of information and encouragement: the math/science to themselves and their fathers (less their mother's) own education and career choices; the controls to their parents' rather conventional expectations regarding education and careers.

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